

Sustainable Forestry in Ireland

A Historic Journey of Deforestation, Restoration and Resilience

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GUEST LECTURE

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1 July 2026



Maynooth Castle, Maynooth, County Kildare, Ireland

Outline of Lecture

- Historical Approach to the development of forestry in Ireland.
- Current status and management systems in Ireland.
- Policy priorities – economic, environmental, social.
- Embracing the challenge – challenge and opportunity.
- Summary and Conclusions.

Post-glaciation colonisation routes for *Quercus* spp.

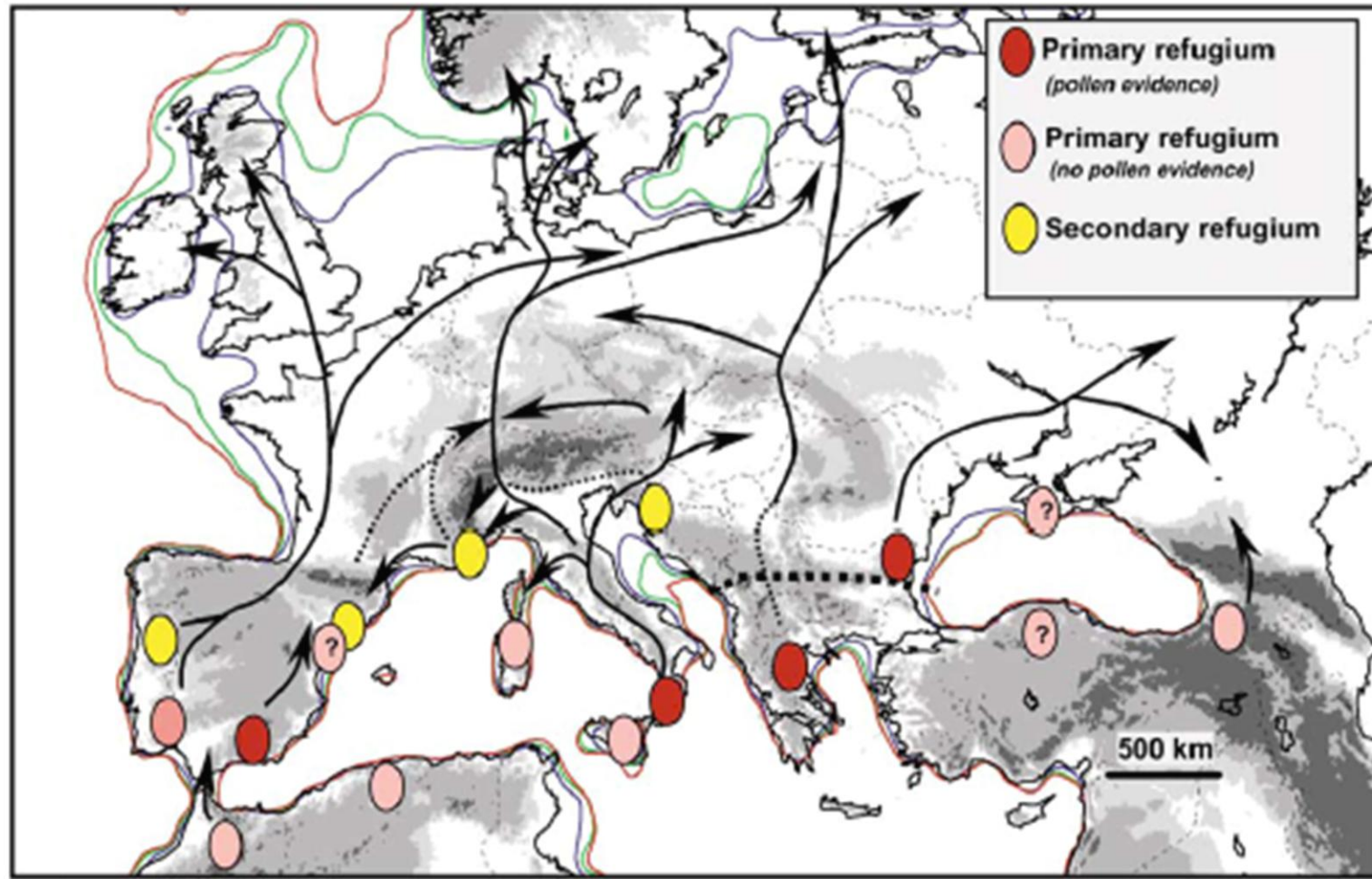
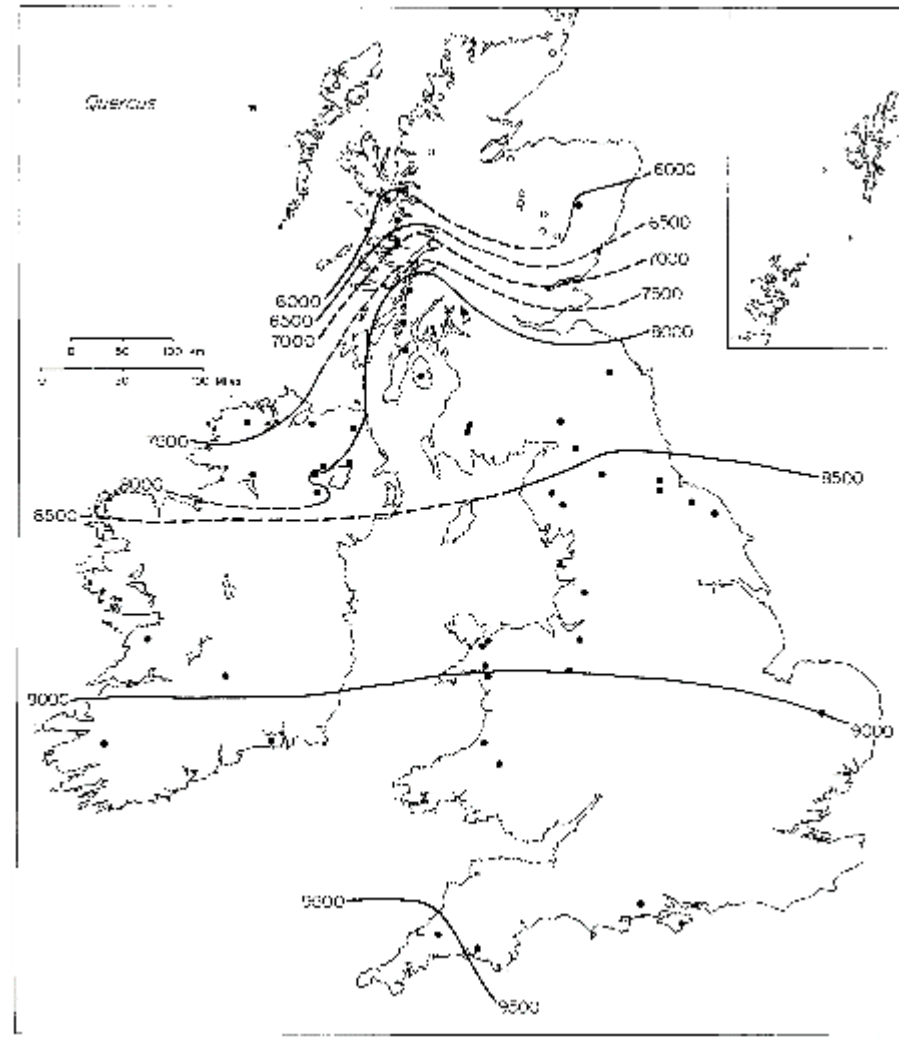


Fig. 3. Schematic distribution of primary and secondary oak refugia and post-glacial movements.

Oak - post-glacial re-colonisation of Ireland



Isochrone map of the rational limit of *Quercus* pollen in Ireland and Britain.

Birks (1989)



Eurasian jay



Lurgan Log-boat
[2000BC]

National Museum of Ireland

24/07/2025



St Canice's Cathedral, Kilkenny
[1200-1290, restored]

Church of Ireland

FROM CANOPY TO NEAR EXTINCTION

1.5%

FOREST COVER
(1918)

The Historic Nadir of Irish Woodlands

- **Tudor & Cromwellian Plantations (1556–1690):** Broadleaf canopies were rapidly cleared for agricultural conversion, export shipbuilding, and industrial fuel.
- **Wyndham Land Act (1903):** Tenant land purchases triggered massive defensive felling by landlords liquidating timber assets prior to property transfers.
- **World War I Demands (1914–1918):** Massive timber extraction for trenches and coalmines stripped the remaining fragile forest pockets.



24/07/2025

REBUILDING THE FORESTS: 1903–1946

1903

Birth of State Forestry

The state acquires Avondale Estate in Wicklow. Pioneered by Augustine Henry, it becomes Ireland's first official forestry training center and tactical experimental planting station.

1922

The Irish Free State

Post-independence, the government commits to afforestation. To preserve productive farmland, planting is restricted strictly to marginal, poor soils, initiating widespread exotic conifer use.

1946

The Landmark Act

The 1946 Forestry Act establishes strict legal frameworks for tree protection. It introduces felling licenses and mandatory replanting, backing a massive target of 10,000 acres planted per year.

Avondale House – Cradle of Irish Forestry



POLICY & PRIVATISATION: 1973–1989

1973

EEC Entry & Private Boom

Accession to the European Economic Community changes the economic model. The 1981 "Western Package" introduces transformative state grants, encouraging private landowners to convert pastures into thriving woodlots.

1988

The Coillte Separation

Under the 1988 Forestry Act, state operations are split. Regulatory and policy powers remain with the Forest Service, while commercial assets are handed to **Coillte**, a commercial semi-state enterprise.

THE CLIMATE AND BIODIVERSITY PIVOT

COFORD Research Foundation (1993):

Established to direct research funding and introduce strict scientific standards in genetics, pathogen controls, and sustainable practices.

Modern Strategic Policy Reorientation:

Transition from commercial monoculture plantations to climate-resilient native woodland schemes focused on continuous cover and diverse broadleaf species.

Current Rebound:

National canopy cover has recovered to **11.6%**, restoring ecological functions while building a sustainable bioeconomy.

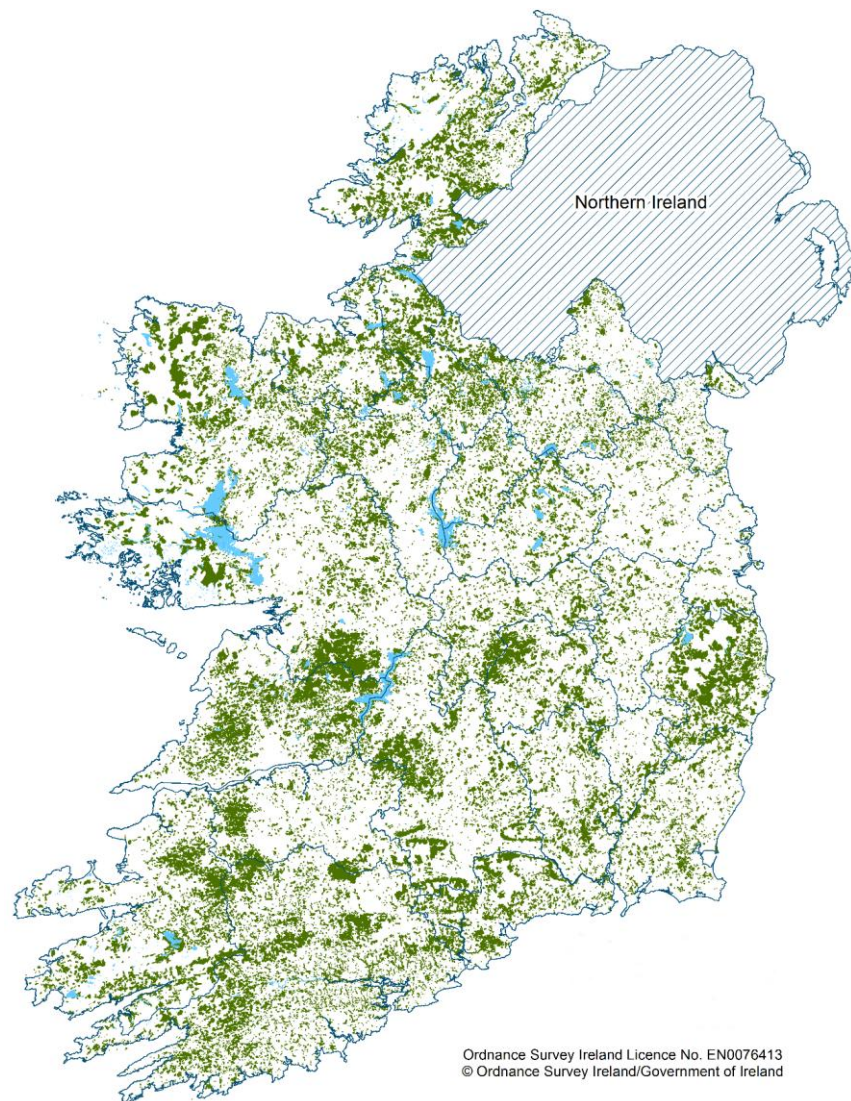


Productive Forestry in Ireland

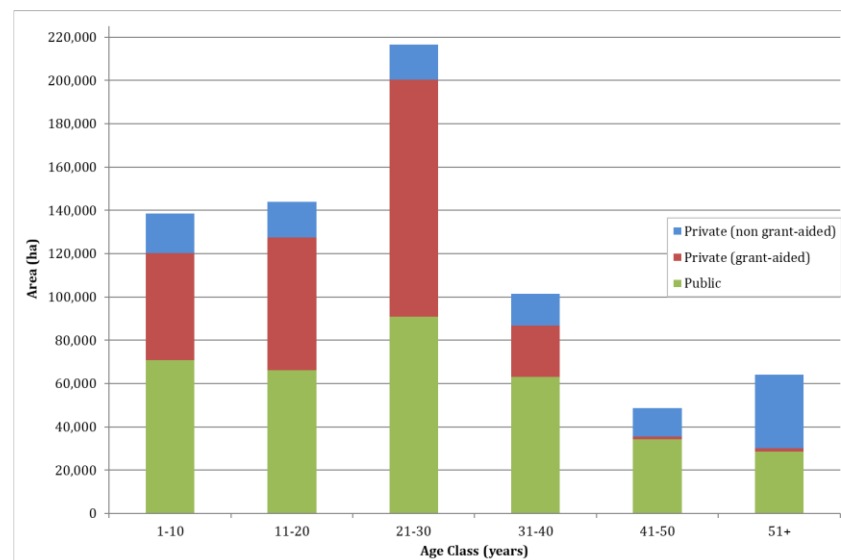
- Low forest cover relative to EU
 - 11.6% versus approx. 38%
- Forest area = 808,848 ha
 - Approx. 50% state, 50% private
 - Three main groups:
 - State forestry company (Coillte)
 - Farm forests (generally small-scale forestry)
 - Private forestry (investment led)
 - Most of the woodland is composed of first and second rotation plantations
 - Dominant silvicultural system: **clearfell (RFM)**
 - Production approx 3.5 M m³/year, rising to >8.0 M m³/year by 2035
- Sitka spruce resource 335 000 ha (52%)
- Direct employment: 12,000 FTE
- Woodland owners: >20,000
- Visits to Irish forests: >29 M (2019, pre-pandemic data)



Forest Area, Age Class Structure and Ownership in Ireland

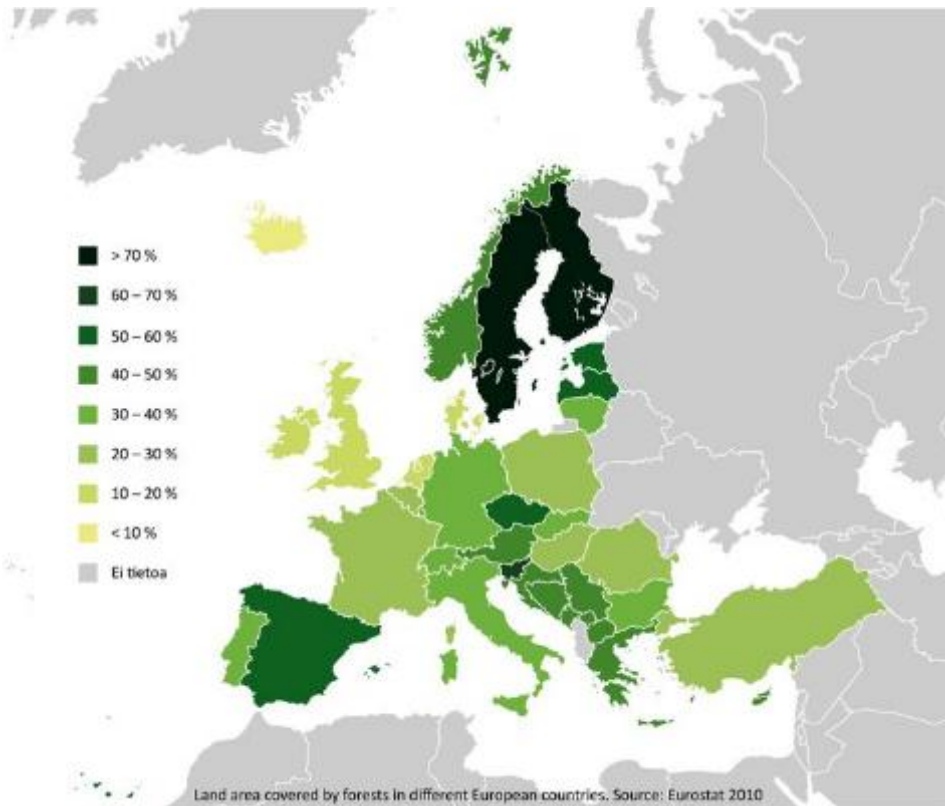


- **Forest Area – 808,000 ha**
 - 61% - Conifer
 - 27% - Broadleaves
 - 11% - Open ground
- **Forest Ownership**
 - 15% - Private (non-grant aided post 1980)
 - 36% - Private (grant aided post 1980)
 - 49% - Public (Coillte)

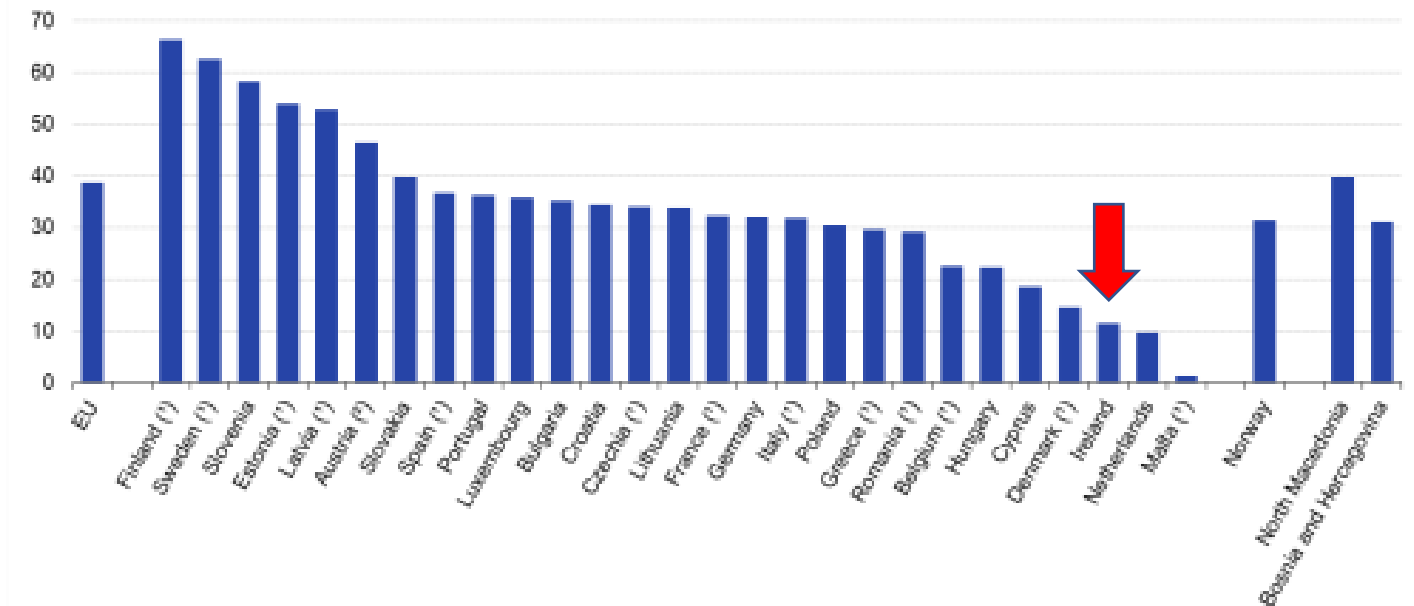


Forest Area in Europe

Ireland is one of the least forested countries on the continent



Forest area in the EU, 2022
(%)

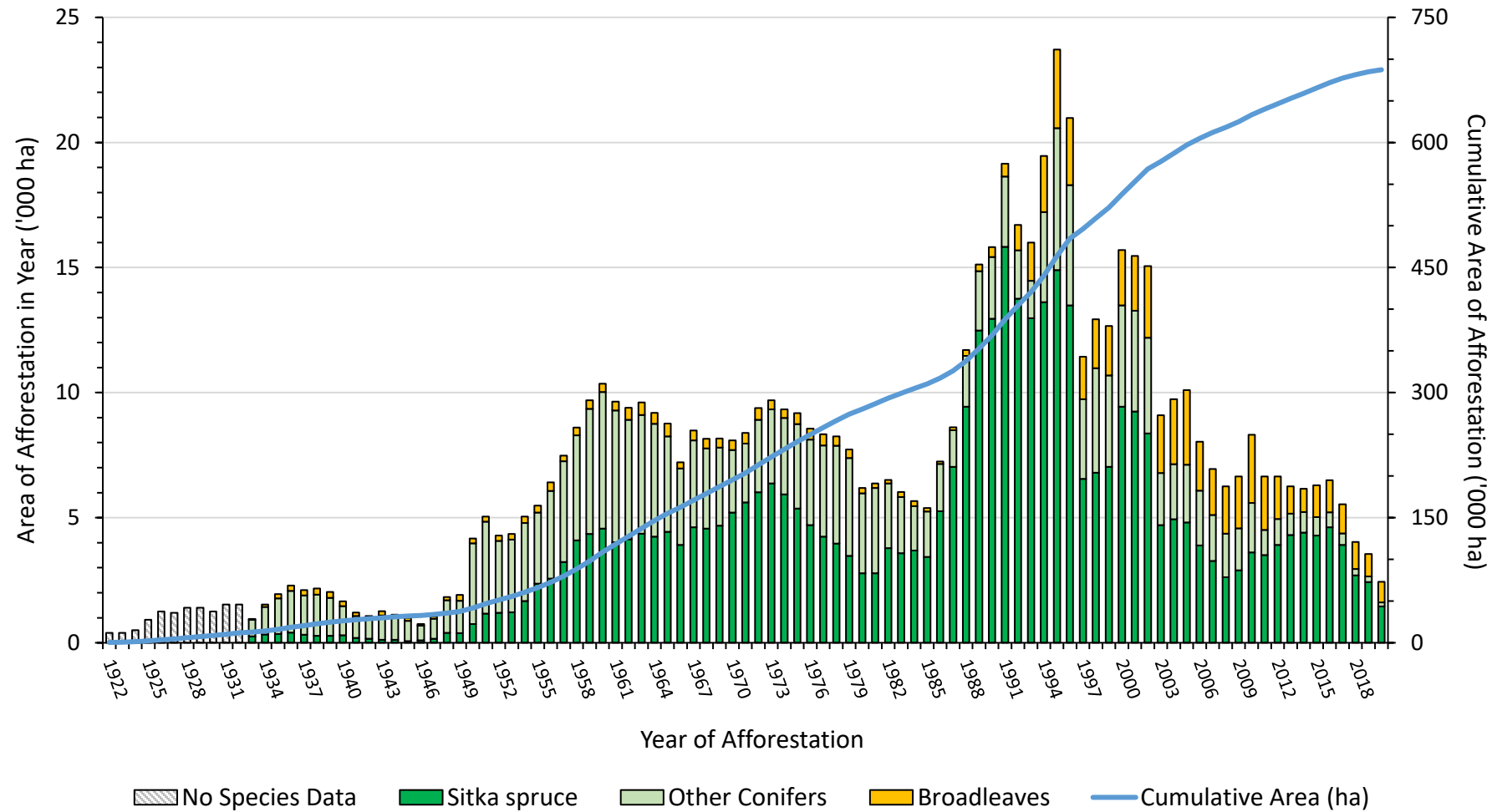


(1) Estimates for 2022 (2) Provisional data
Note: All data for 2000 are estimates. Data for France refer to metropolitan France.
Source: Eurostat, FAO (online data code: for_area_efa and reg_area3)

eurostat

Ireland Forest Area: 11.6% of land area. EU Average Forest Area: 38% of the land area.

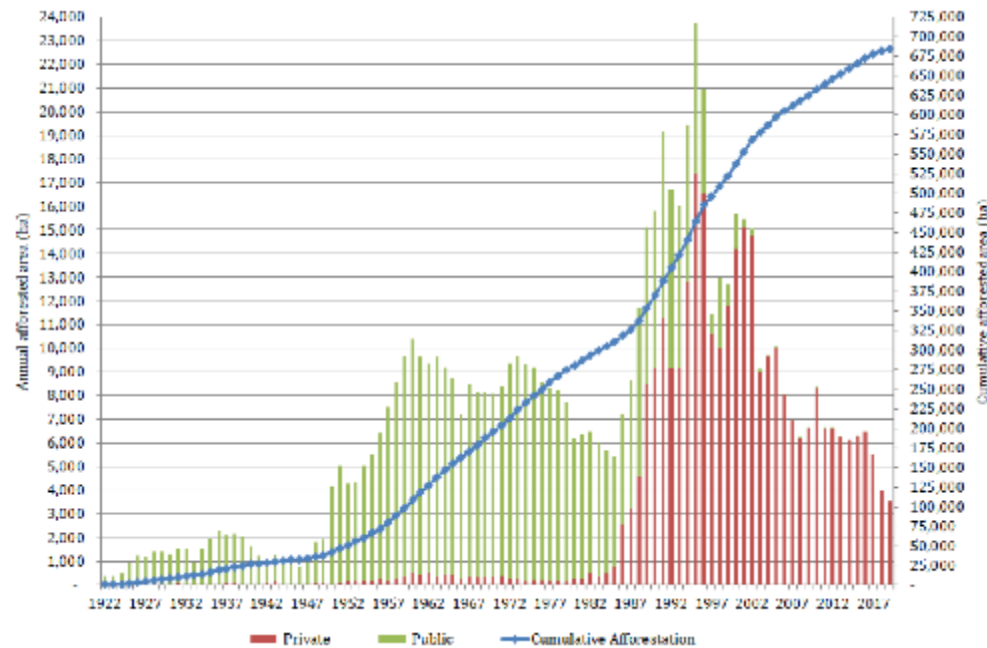
Area of Afforestation in Ireland, 1922-2020



(Source: National Forest Inventory, 2020)

Key Forestry Statistics: Woodland Establishment and Timber Production

a. Woodland Establishment: 1922-2020



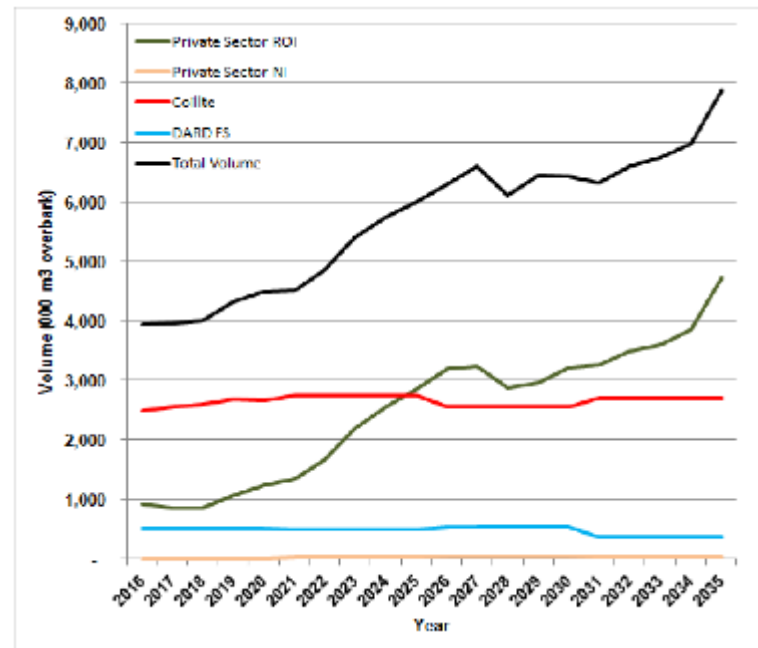
Cumulative afforestation (**blue line**)

1922 - 1.4% | 2020 – 11.8%

State afforestation (**green bar**) – 1920s-1990s

Private forestry (**red bar**) – 1980s to present

b. Production Forecast: 2016-2035



Total timber production forecast (**black line**)

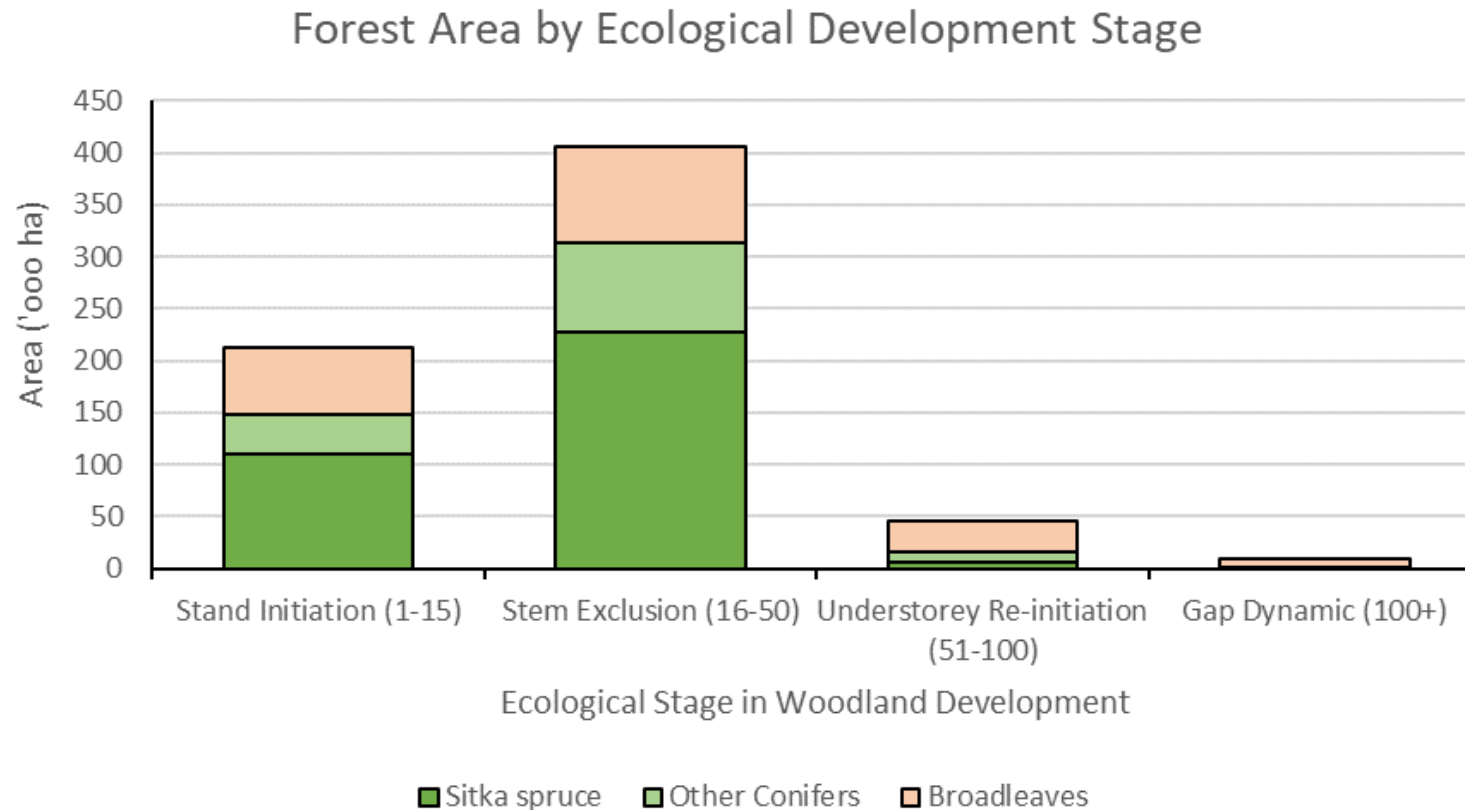
2016 = 4 M m³

2035 = 8 M m³

Source: National Forest Inventory 2020

Forest area by ecological development stage

Source: National Forest Inventory



71% conifer
29% broadleaves

75% <30 years old

SI/SE: 92%
UR/GD: 8%

Methodology: Mason (2007)

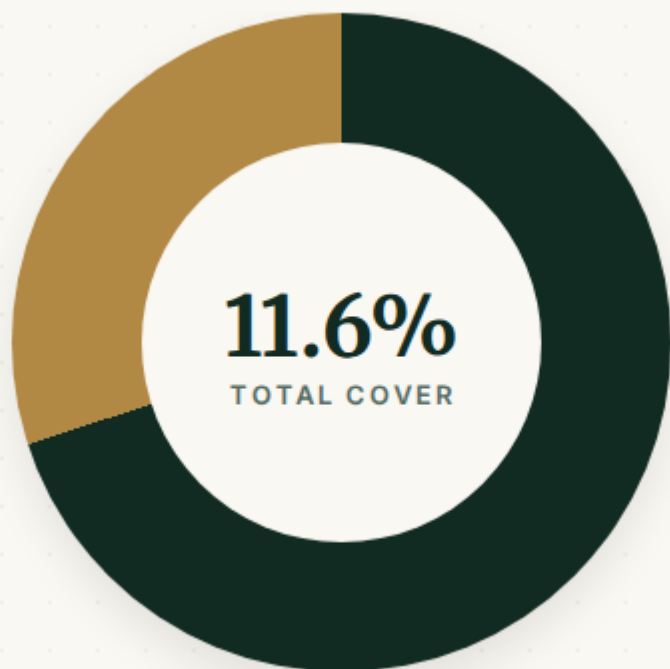
>90% of conifer forests are managed on the clear-fell system







THE MODERN IRISH CANOPY PROFILE



The Tree Composition Challenge

While recovery from the 1.5% nadir is a dramatic triumph, the current challenge lies in tree composition. Monoculture conifers dominate, and current policy mandates shift closer to a resilient native balance.

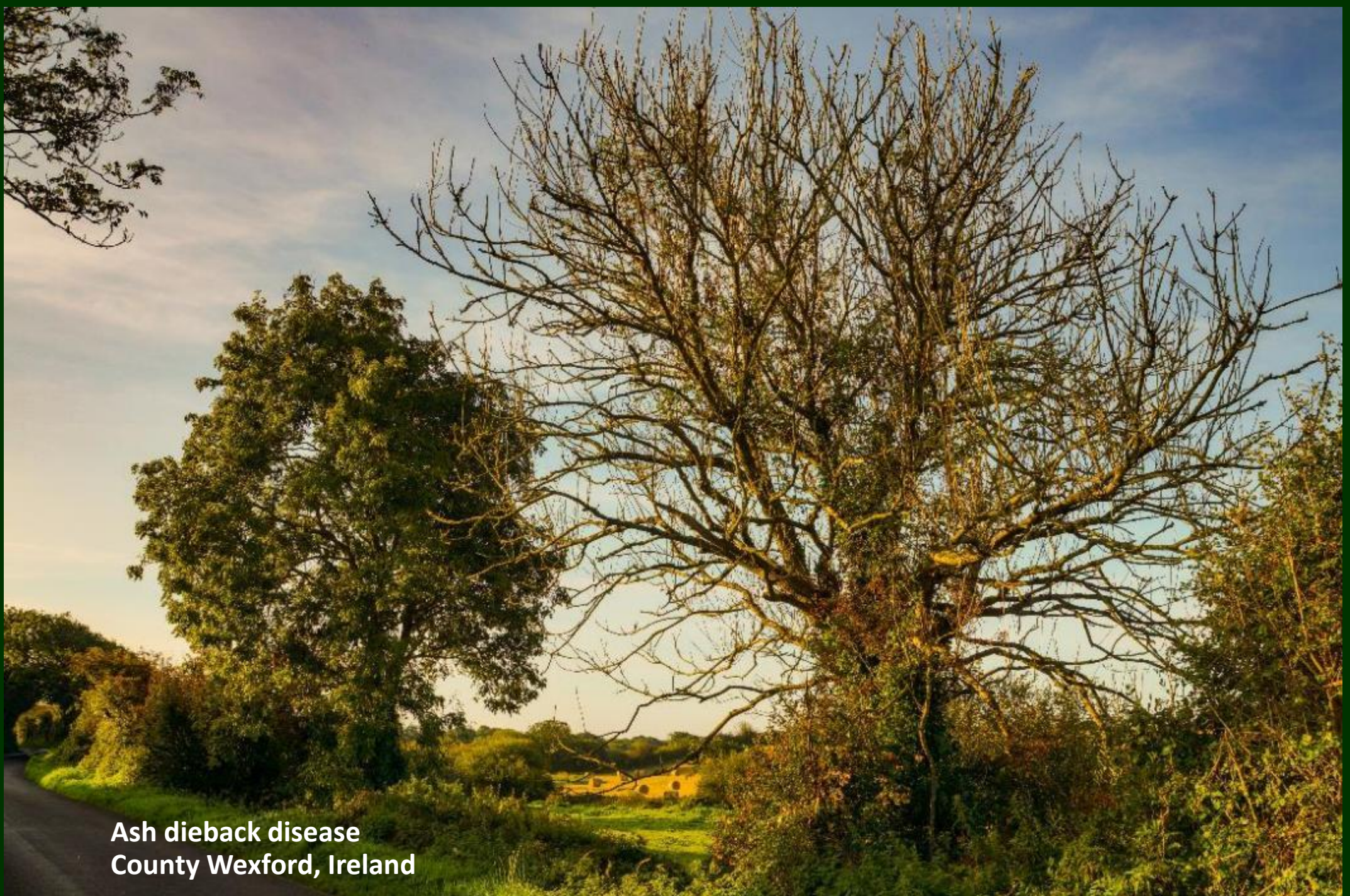
-  **Conifers (~70%):** Mainly introduced Sitka Spruce utilized for fast, commercial timber output.
-  **Broadleaves (~30%):** Native Birch, Oak, and Alder prioritized by modern biodiversity schemes.

Review: Threats to Irish Forests

- **Climate change**
 - Summer dry periods likely, especially in South and East
 - Extreme rain and flooding events are more likely
 - Ecosystem change – especially ground plants
- **Pests and diseases**
 - Native and exotic
- **Low Resilience of Existing Forest Resources**
 - Low number of productive species
 - Monoculture stands are most common

Storm Eowyn, 2025





Ash dieback disease
County Wexford, Ireland

Policy Drivers for Irish Forestry

Policy Drivers:

1. Increase ecological resilience
2. Promote multi-functional forest management
3. Maintain timber production and quality

Strategy:

- Increase species and structural diversity at stand and landscape scales (Leslie et al. 2024)

***f*(forest area + species + structure)**

National Strategy and Policy Priorities

- **Government strategy:**

- *Forests for Ireland 2023–2027* (and beyond).
- Climate Action Plan (carbon sequestration targets).
- National Biodiversity Action Plan.

- **High-level goals:**

- Achieve 18% forest cover by mid-century.
- Deliver multifunctional woodlands (climate, biodiversity, water, recreation).
- Shift towards native and mixed-species planting.

- **Integration with EU policy:**

- Green Deal, Biodiversity Strategy, LULUCF regulation.

LULUCF

- Land Use, Land-Use Change and Forestry, which is a sector within the [UN Framework Convention on Climate Change](#) (UNFCCC) and EU climate policy that accounts for greenhouse gas emissions and removals resulting from how land is used and managed.
- Land uses like forests can absorb (sequester) CO₂, while others, such as deforestation or peatland drainage, can release greenhouse gases.
- The LULUCF sector is crucial for meeting climate targets, as it can both contribute to and mitigate climate change impacts.

Key Policy Developments – 2014-present

- **The Forestry Programme (2014–2020):** This programme, extended to 2022, was the primary mechanism for supporting afforestation. It provided 100% establishment grants and 15 years of annual premiums, with a strong focus on commercial conifer plantations, particularly Sitka spruce.
- **Project Woodland (2021-Present):** Established to reform the forestry sector, Project Woodland led to the development of the **Forest Strategy (2023–2030)** and a new **Forestry Programme (2023–2027)**. This marked a significant shift in thinking.
 - The new approach, encapsulated in the motto *"the right trees in the right places for the right reasons"*
 - Emphasizes greater diversity, native woodlands, and integration with farming systems.

CORE STRATEGIC PILLARS



Afforestation

Targeting an ambitious creation of 8,000 hectares of brand new forests annually, forming a foundational pillar in Ireland's binding net-zero climate goals.



Ecosystem Health

Deploying "the right trees in the right places." Focusing on mixed broadleaf expansion, native woodlands, and vital water protection buffer zones.



Social Benefit

Integrating urban "NeighbourWoods" and community forests. Providing public-access green spaces to support mental well-being and local tourism.

THE FARMER-CENTRIC MODEL

- **100% Covered Establishment:** The state entirely funds initial forest establishment, planting, and fencing costs (up to a €50k cap per farm).
- **Tax-Free Annual Premiums:** Farmers receive guaranteed tax-free income-support payments annually for up to 20 years to de-risk agricultural transition.
- **Up to 66% Premium Hikes:** Financial incentives have been increased significantly, with high-priority Native Forest premiums reaching €1,103/ha.





CLOSE-TO-NATURE FORESTRY

Native Tree Area Scheme

This streamlined regulatory scheme allows landowners to plant up to 1 hectare of native woodland or riparian trees along watercourses without undergoing the lengthy standard forestry licensing process, effectively cutting red tape for small-scale local interventions.

Continuous Cover Forestry

By moving away from traditional clear-felling, the Continuous Cover Forestry (CCF) system favors selective thinning. This approach maintains a permanent canopy cover to preserve soil nutrients, protect fragile local wildlife, and secure carbon storage.

THE GREEN BIOECONOMY

Circular Materials

Ensuring a robust supply of certified wood products helps transition the construction sector to a green bioeconomy. Substituting concrete and steel with timber stores carbon long-term in buildings, creating a clean circular economy.



New Schemes (2023–2027)

- **Afforestation Scheme:** The main grant for planting new forests, now with a greater incentive for broadleaves and mixed-species forests.
- **Native Tree Area Scheme:** A smaller-scale, streamlined scheme for farmers to plant up to 1 hectare of native trees without the full licensing process. This aims to increase farmer engagement.
- **Agroforestry:** A scheme that encourages farmers to integrate trees into their agricultural land, allowing them to continue farming while receiving payments for the trees.

12 Forest Types of the Afforestation Scheme

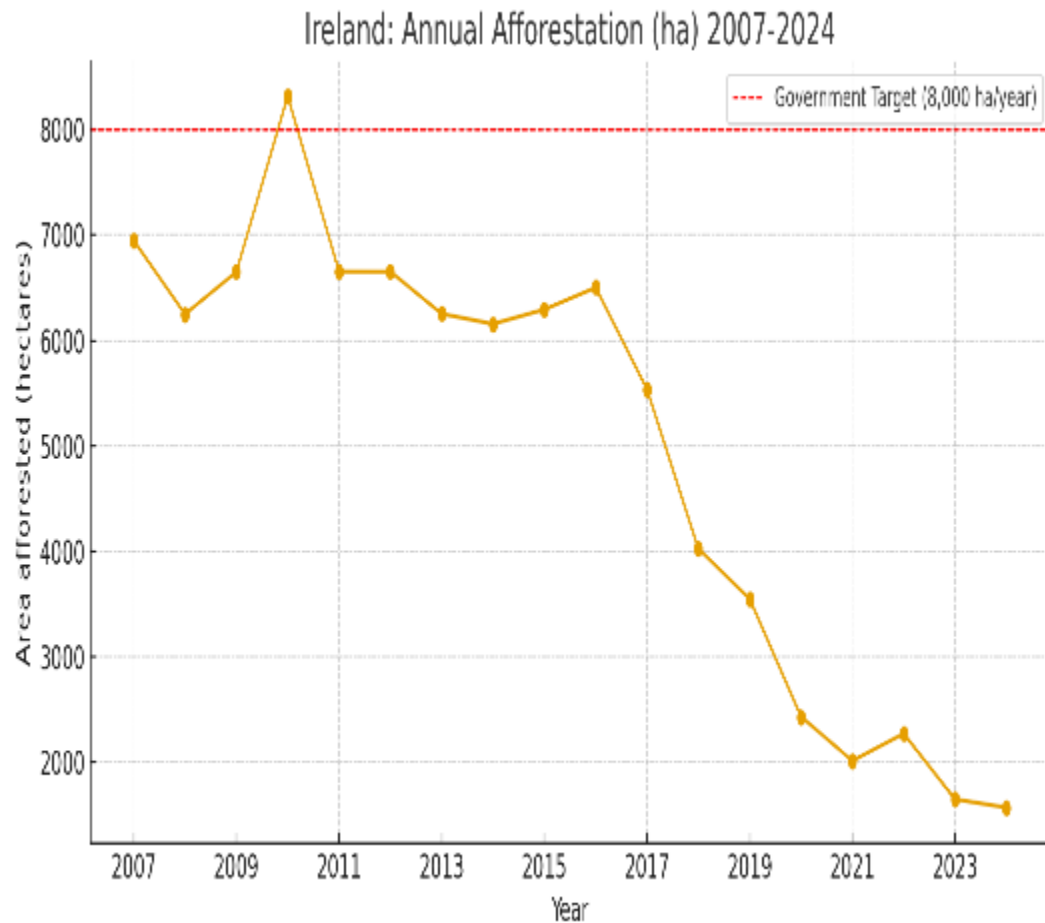
- **Framework for landowners to choose the most suitable option for their land and goals.**
- **The different types offer varying grant rates and annual premium payments to incentivize certain types of planting.**
- **FT1: Native Forests** - Creation of new native woodlands to enhance biodiversity and landscape value.
- **FT2: Forests for Water** - Planting along watercourses to protect and improve water quality.
- **FT3: Forests on Public Lands** - Designed for public bodies to create woodlands for public benefit.
- **FT4: NeighbourWoods** - Promotes the creation of new woodlands within or near communities.
- **FT5: Emergent Forests** - A low-cost option to allow natural regeneration on suitable sites.
- **FT6: Broadleaf, mainly oak or beech** - Focused on planting high-quality, long-term broadleaf forests.

12 Forest Types of the Afforestation Scheme

- **FT7: Diverse Broadleaf** - Encourages a mix of various broadleaf species.
- **FT8: Agroforestry** - Supports the integration of trees and agriculture on the same land.
- **FT9: Seed Orchards** - Dedicated to the production of high-quality seeds for commercial forestry.
- **FT10: Continuous Cover Forestry (CCF)** - A key option for new forests that will be managed without clear-felling.
- **FT11: Mixed high forests: Diverse Conifer, with 20% broadleaves** - A mix of conifer species with a broadleaf component to improve biodiversity and resilience.
- **FT12: Mixed high forests with mainly spruce, with 20% broadleaves** - The modern version of the traditional commercial conifer plantation, requiring a broadleaf element to diversify and improve ecological function.



The Challenge for Afforestation



The Need for Social License:
“Straw Boys” pulling Sitka spruce in Leitrim – Climate Activism
(removing seedlings, blocking drains, re-wetting peatlands)

Hard Facts: Target vs. Current Planting

- The Irish Government's target is 8,000 hectares per year of new afforestation to help move towards broader forest strategy goals.
- The longer-term aim, linked to this, is to have 18% of the land area under forest cover by 2050.
- Recent planting rates are **well below** the 8,000 ha/year target. For example, only about 1,651 ha were planted in 2023.
- Thus, there is a significant gap between what is needed to meet the 2050 18% forest cover goal and current afforestation performance

Reasons for the Decline in Afforestation

- **Administrative bottlenecks** (licensing and environmental compliance).
- **Reduced land suitability and competition** from agriculture.
- **Farmer and community reluctance**, rooted in cultural, economic, and policy uncertainties.
- **How do we Boosting Afforestation?**
- more funding, but a rebuild of trust, simplification of licensing, and better integration with farming systems.

The background of the slide is a photograph of a lush forest. Tall, slender evergreen trees, likely spruce or fir, dominate the scene, their green needles creating a dense canopy. Sunlight filters through the branches, creating dappled light on the forest floor. A semi-transparent red rectangular box is centered over the image, containing white text. The text is arranged in three parts: a bold title, a descriptive paragraph, and a source attribution.

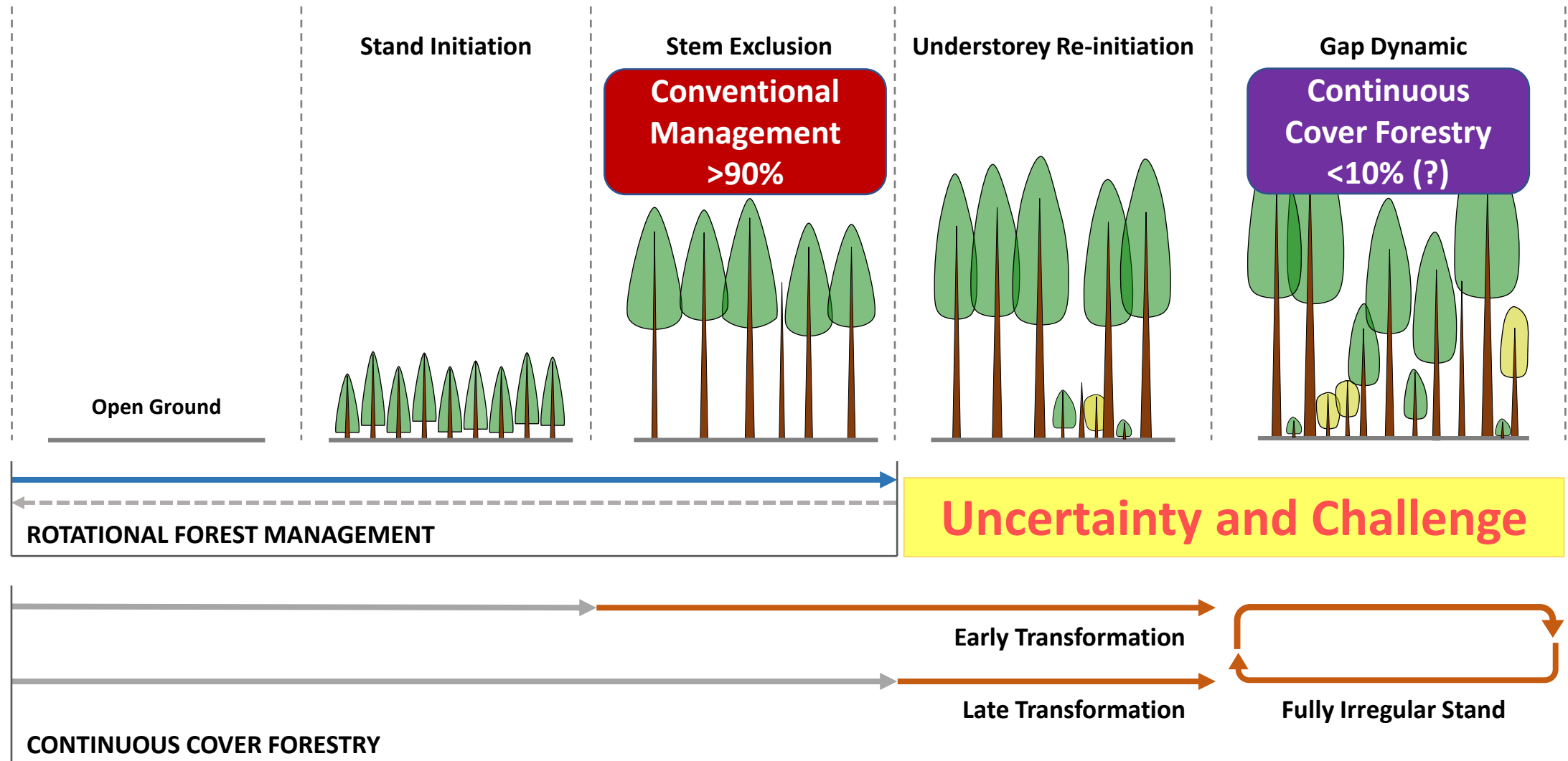
Continuous Cover Forestry (CCF)

A forest management system that integrates the environmental, social and economic benefits of forestry by maintaining the forest canopy and embracing natural regeneration to replace harvested trees.

Pro Silva Ireland (2025)

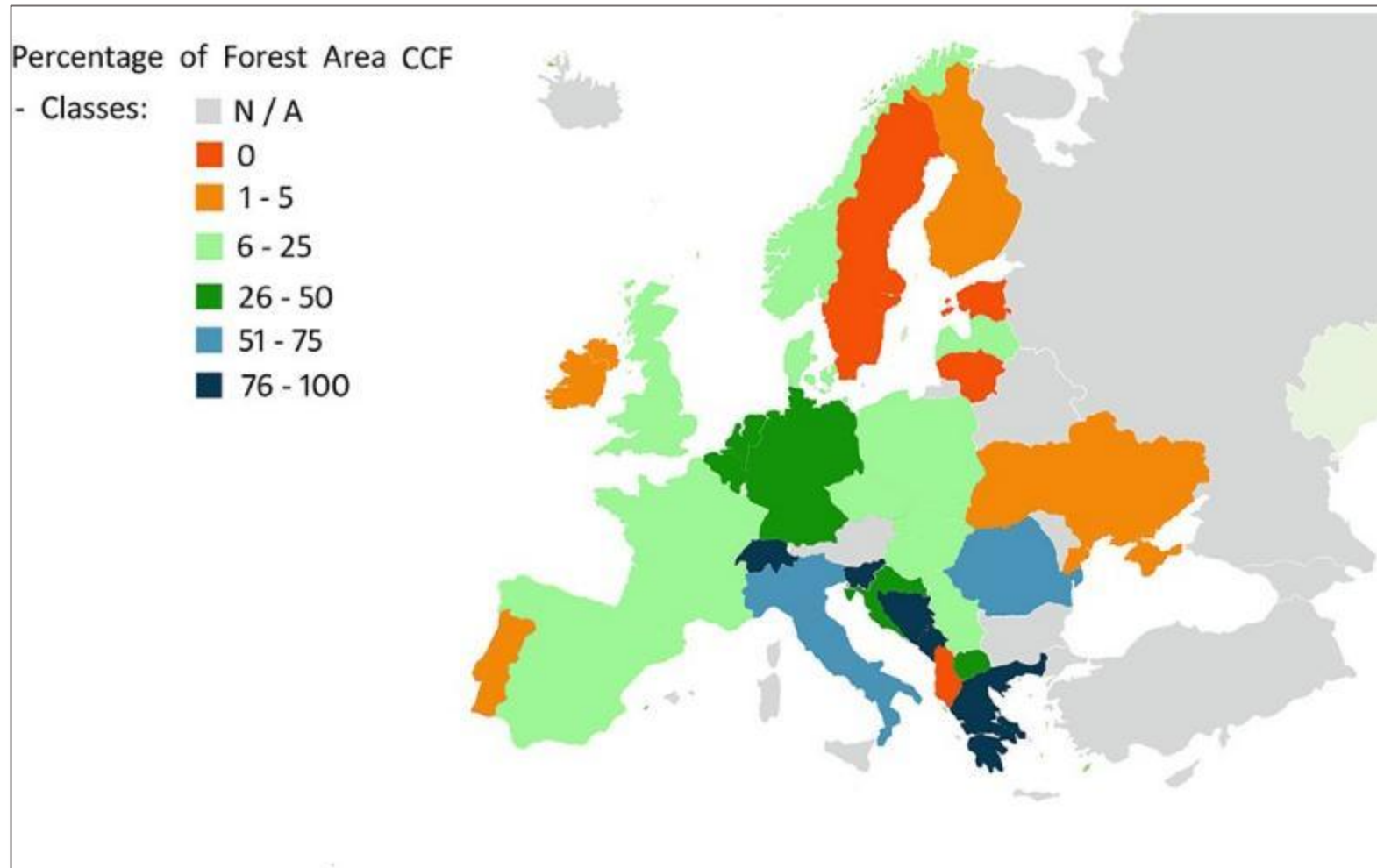
Forest stand dynamics and silvicultural systems

Idealised pathway for stand structural development | Oliver and Larson (1996)



Percentage of forest area managed by CCF across Europe

Mason et al. 2022



Cultural Transformation

Bottom-Up Change (Movement-Driven)

Focus on cultivating a core group of advocates to drive change:

1. Identify passionate believers
2. Build a community
3. Evolve into a revolution

Top-Down Change (Leadership-Driven)

Focus on formal structures and leadership to guide the process:

1. Secure leadership commitment
2. Implement new systems
3. Foster communication
4. Align stakeholders



Pro Silva Ireland Field Day

*Ireland's Forest Strategy
2023–2027*



Individual Tree Management



Training



Technology







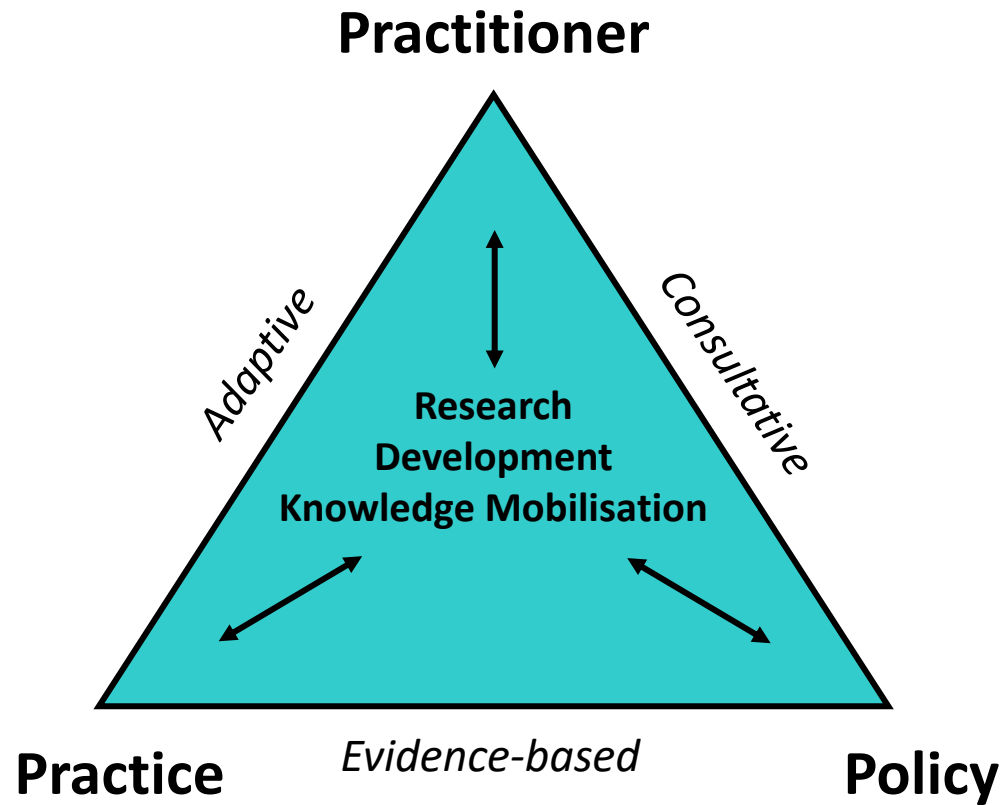


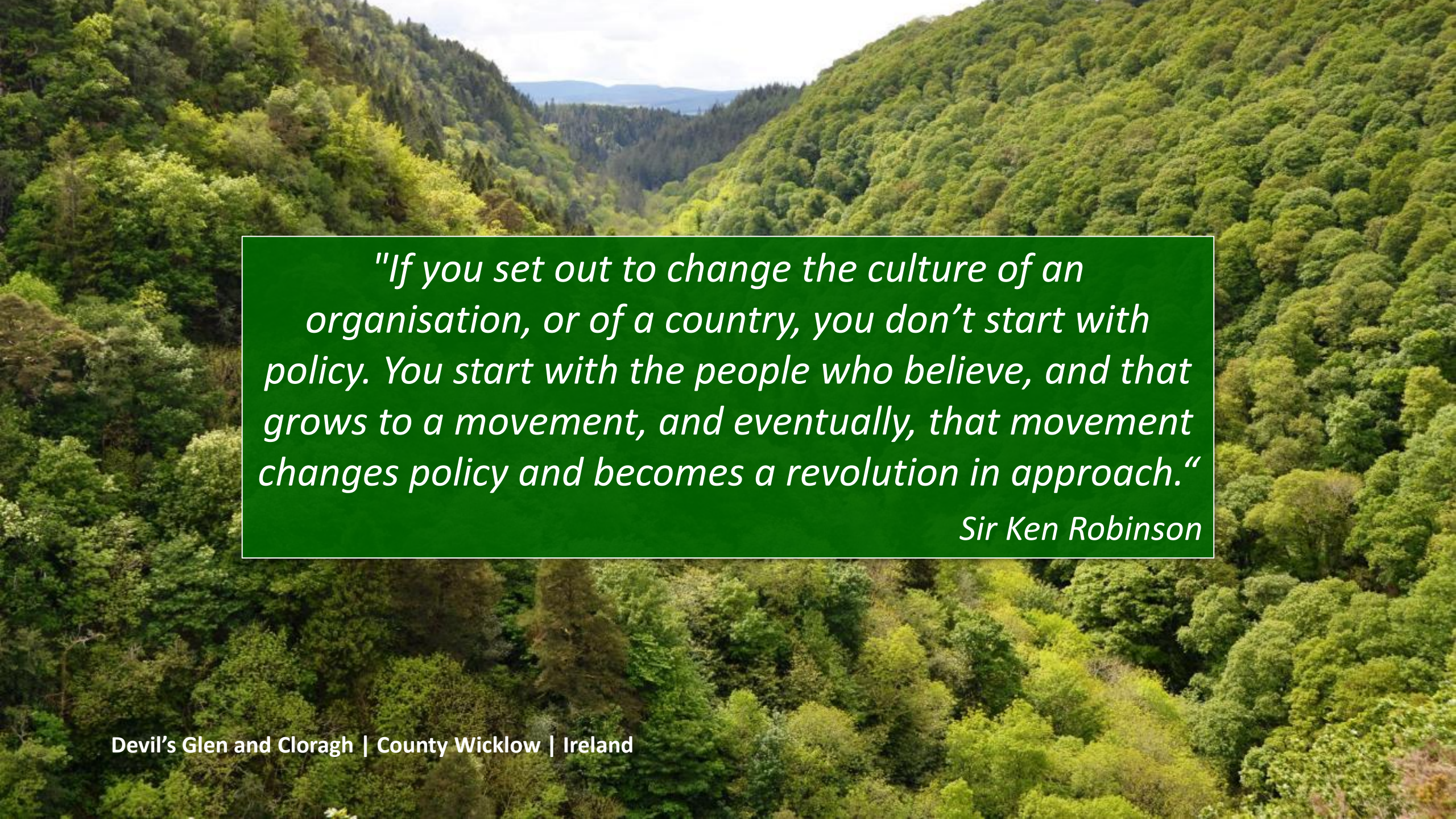
Key CCF Development & Achievements

- **2000 | Founding of Pro Silva Ireland**, establishing the first community of practice dedicated to CCF.
- **2000s | Establishment of Exemplar Forests** (e.g., in Coillte & private lands) becoming vital sites for demonstration, training, and learning.
- **Mid-2000s | Launch of Initial Pro Silva Training Events** and peer-to-peer workshops, translating international CCF theory into applicable Irish practice.
- **2010s | Research Investment (e.g., LISS-TranSSFor-ContinuFor Programme)**: Providing robust, Irish-specific data on CCF performance, moving the approach beyond belief to evidence.
- **2016 | Introduction of DAFM's CCF Woodland Improvement Grant (WIG)**: This was a crucial policy pivot, recognising and funding the transitional management required for CCF.
- **2020s | DAFM Knowledge Transfer Groups (KTGs) & Broader Support**: Integration of CCF into DAFM programmes, including support within the establishment grant system, mainstreaming the approach.
- **2021 | Project Woodland FT10 and FT11 Afforestation Grants** for CCF and Mixed High Forests
- **2023 | Pro Silva Ireland** hosts Pro Silva Europe Annual Meeting
- **2025 | Coillte dedicates 30 % of estate (>130K ha)** to nature-based management, using CCF

Triangle of Transformation

Linking practitioners, policy and practice



A high-angle photograph of a dense, vibrant green forest covering rolling hills. In the distance, a valley opens up, showing more forested hills under a bright, slightly overcast sky. The foreground is filled with the tops of many trees, creating a textured green canopy.

"If you set out to change the culture of an organisation, or of a country, you don't start with policy. You start with the people who believe, and that grows to a movement, and eventually, that movement changes policy and becomes a revolution in approach."

Sir Ken Robinson

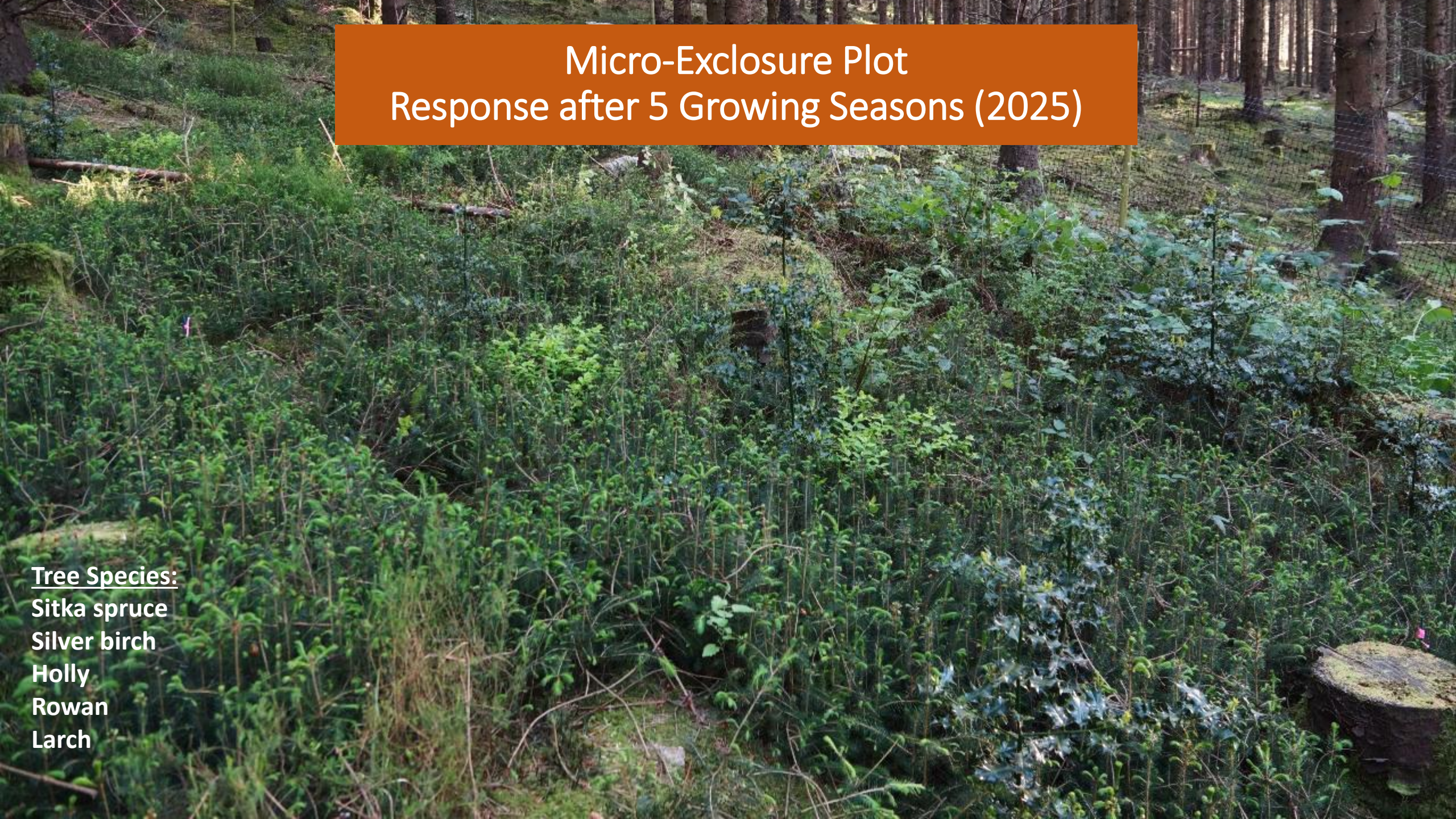




Sika deer

Control Plot Response after 5 Growing Seasons (2025)





Micro-Exclosure Plot Response after 5 Growing Seasons (2025)

Tree Species:

Sitka spruce

Silver birch

Holly

Rowan

Larch











What we aim to achieve:

*[Manage the forest in a way] that trees could be cut
and the forest preserved at one and the same time.*

Gifford Pinchot (1947)

Summary

12%

NATIONAL FOREST COVER

Reconstructed from an all-time historic low of just 1% in 1900. While progress has been made, the national estate remains significantly below the EU average of 38%.

Departing from Monoculture

Historically, Irish forestry policies heavily prioritized commercial conifer monocultures, primarily Sitka spruce, resulting in simplified ecological landscapes.

The current 2023–2027 system drives a structural shift toward multifunctional forestry. This model prioritizes rich biodiversity, climate resilience, and ecosystem value over pure timber volume.

Irish Forestry: Past, Present, Future

- ⌚ **The Historical Decline (Past)** Overexploitation, agricultural clearances, and colonization decimated Ireland's ancient, post-glacial 80% tree cover to an ecological low of just 1% by 1900.
- 🌲 **Rebuilding the Timber Estate (Present)** A century of state leadership and EU support succeeded in restoring forest cover back to 11%, driven heavily by commercial conifer afforestation.
- 🔄 **The Multi-Functional Shift (Future)** Moving decisively away from monocultures toward a balanced, resilient approach that optimizes commercial timber, nature conservation, and carbon sinks.
- ✳️ **Ambitions & Achievements (2050 Vision)** Coillte aims to plant 100,000 hectares of new forests (50% native woodland), transition 50% of the estate for biodiversity, and rewild 30,000 hectares of peatland.



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